RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/722,045A
Source: IFW0
Date Processed by STIC: 2-25-05

ENTERED

IFWO

RAW SEQUENCE LISTING DATE: 02/02/2005
PATENT APPLICATION: **US/10/722,045A** TIME: 16:10:49

Input Set : **E:\7682108999-2.txt**
Output Set: **N:\CRF4\02022005\J722045A.raw**

```
      3 <110> APPLICANT: DeJong, Jan
      4       Fouchier, Ronaldus
      5       Van Den Hoogen, Bernadetta
      6       Osterhaus, Albertus
      7       Groen, Jan
      9 <120> TITLE OF INVENTION: Virus causing respiratory tract illness in susceptible
mammals
     11 <130> FILE REFERENCE: 7862-108-999
     13 <140> CURRENT APPLICATION NUMBER: 10/722,045A
     14 <141> CURRENT FILING DATE: 2003-11-25
     16 <150> PRIOR APPLICATION NUMBER: PCT/NL02/00040
     17 <151> PRIOR FILING DATE: 2002-01-18
     19 <150> PRIOR APPLICATION NUMBER: EP01200213.5
     20 <151> PRIOR FILING DATE: 2001-01-19
     22 <150> PRIOR APPLICATION NUMBER: EP01203985.5
     23 <151> PRIOR FILING DATE: 2001-10-18
     25 <160> NUMBER OF SEQ ID NOS: 172
     27 <170> SOFTWARE: PatentIn version 3.2
     29 <210> SEQ ID NO: 1
     30 <211> LENGTH: 394
     31 <212> TYPE: PRT
     32 <213> ORGANISM: Human metapneumovirus 00-1
     34 <400> SEQUENCE: 1
     36 Met Ser Leu Gln Gly Ile His Leu Ser Asp Leu Ser Tyr Lys His Ala
     37 1               5                  10                  15
     40 Ile Leu Lys Glu Ser Gln Tyr Thr Ile Lys Arg Asp Val Gly Thr Thr
     41             20                  25                  30
     44 Thr Ala Val Thr Pro Ser Ser Leu Gln Gln Glu Ile Thr Leu Leu Cys
     45         35                  40                  45
     48 Gly Glu Ile Leu Tyr Ala Lys His Ala Asp Tyr Lys Tyr Ala Ala Glu
     49     50                  55                  60
     52 Ile Gly Ile Gln Tyr Ile Ser Thr Ala Leu Gly Ser Glu Arg Val Gln
     53 65                  70                  75                  80
     56 Gln Ile Leu Arg Asn Ser Gly Ser Glu Val Gln Val Val Leu Thr Arg
     57                 85                  90                  95
     60 Thr Tyr Ser Leu Gly Lys Ile Lys Asn Asn Lys Gly Glu Asp Leu Gln
     61             100                 105                 110
     64 Met Leu Asp Ile His Gly Val Glu Lys Ser Trp Val Glu Glu Ile Asp
     65         115                 120                 125
     68 Lys Glu Ala Arg Lys Thr Met Ala Thr Leu Leu Lys Glu Ser Ser Gly
     69     130                 135                 140
     72 Asn Ile Pro Gln Asn Gln Arg Pro Ser Ala Pro Asp Thr Pro Ile Ile
     73 145                 150                 155                 160
     76 Leu Leu Cys Val Gly Ala Leu Ile Phe Thr Lys Leu Ala Ser Thr Ile
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(pg. 6)

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PATENT APPLICATION: US/10/722,045A TIME: 16:10:49

Input Set : E:\7682108999-2.txt
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```
77                 165                 170                 175
80 Glu Val Gly Leu Glu Thr Thr Val Arg Arg Ala Asn Arg Val Leu Ser
81             180                 185                 190
84 Asp Ala Leu Lys Arg Tyr Pro Arg Met Asp Ile Pro Lys Ile Ala Arg
85         195                 200                 205
88 Ser Phe Tyr Asp Leu Phe Glu Gln Lys Val Tyr His Arg Ser Leu Phe
89     210                 215                 220
92 Ile Glu Tyr Gly Lys Ala Leu Gly Ser Ser Ser Thr Gly Ser Lys Ala
93 225                 230                 235                 240
96 Glu Ser Leu Phe Val Asn Ile Phe Met Gln Ala Tyr Gly Ala Gly Gln
97                 245                 250                 255
100 Thr Met Leu Arg Trp Gly Val Ile Ala Arg Ser Ser Asn Asn Ile Met
101             260                 265                 270
104 Leu Gly His Val Ser Val Gln Ala Glu Leu Lys Gln Val Thr Glu Val
105         275                 280                 285
108 Tyr Asp Leu Val Arg Glu Met Gly Pro Glu Ser Gly Leu Leu His Leu
109     290                 295                 300
112 Arg Gln Ser Pro Lys Ala Gly Leu Leu Ser Leu Ala Asn Cys Pro Asn
113 305                 310                 315                 320
116 Phe Ala Ser Val Val Leu Gly Asn Ala Ser Gly Leu Gly Ile Ile Gly
117                 325                 330                 335
120 Met Tyr Arg Gly Arg Val Pro Asn Thr Glu Leu Phe Ser Ala Ala Glu
121             340                 345                 350
124 Ser Tyr Ala Lys Ser Leu Lys Glu Ser Asn Lys Ile Asn Phe Ser Ser
125         355                 360                 365
128 Leu Gly Leu Thr Asp Glu Glu Lys Glu Ala Ala Glu His Phe Leu Asn
129     370                 375                 380
132 Val Ser Asp Asp Ser Gln Asn Asp Tyr Glu
133 385                 390
136 <210> SEQ ID NO: 2
137 <211> LENGTH: 391
138 <212> TYPE: PRT
139 <213> ORGANISM: Avian pneumovirus A
141 <400> SEQUENCE: 2
143 Met Ser Leu Glu Ser Ile Arg Leu Ser Asp Leu Glu Tyr Lys His Ala
144 1               5                   10                  15
147 Ile Leu Glu Asp Ser Gln Tyr Thr Ile Arg Arg Asp Val Gly Ala Thr
148             20                  25                  30
151 Thr Ala Ile Thr Pro Ser Glu Leu Gln Pro Gln Val Ser Thr Leu Cys
152         35                  40                  45
155 Gly Met Val Leu Phe Ala Lys His Thr Asp Tyr Glu Pro Ala Ala Glu
156     50                  55                  60
159 Val Gly Met Gln Tyr Ile Ser Thr Ala Leu Gly Ala Asp Arg Thr Gln
160 65                  70                  75                  80
163 Gln Ile Leu Lys Asn Ser Gly Ser Glu Val Gln Gly Val Met Thr Lys
164                 85                  90                  95
167 Ile Val Thr Leu Ser Ala Glu Gly Ser Val Arg Lys Arg Glu Val Leu
168             100                 105                 110
171 Asn Ile His Asp Val Gly Val Gly Trp Ala Asp Asp Val Glu Arg Thr
```

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Input Set : E:\7682108999-2.txt
Output Set: N:\CRF4\02022005\J722045A.raw

```
172         115                 120                 125
175 Thr Arg Glu Ala Met Gly Ala Met Val Arg Glu Lys Val Gln Leu Thr
176     130                 135                 140
179 Lys Asn Gln Lys Pro Ser Ala Leu Asp Ala Pro Val Ile Leu Leu Cys
180 145                 150                 155                 160
183 Ile Gly Ala Leu Ile Phe Thr Lys Leu Ala Ser Thr Val Glu Val Gly
184                 165                 170                 175
187 Leu Glu Thr Ala Ile Arg Arg Ala Ser Arg Val Leu Ser Asp Ala Ile
188             180                 185                 190
191 Ser Arg Tyr Pro Arg Met Asp Ile Pro Arg Ile Ala Lys Ser Phe Phe
192         195                 200                 205
195 Glu Leu Phe Glu Lys Lys Val Tyr Tyr Arg Asn Leu Phe Ile Glu Tyr
196     210                 215                 220
199 Gly Lys Ala Leu Gly Ser Thr Ser Thr Gly Ser Arg Met Glu Ser Leu
200 225                 230                 235                 240
203 Phe Val Asn Ile Phe Met Gln Ala Tyr Gly Ala Gly Gln Thr Met Leu
204                 245                 250                 255
207 Arg Trp Gly Val Ile Ala Arg Ser Ser Asn Asn Ile Met Leu Gly His
208             260                 265                 270
211 Val Ser Val Gln Ala Glu Leu Arg Gln Val Ser Glu Val Tyr Asp Leu
212         275                 280                 285
215 Val Arg Lys Met Gly Pro Glu Ser Gly Leu Leu His Leu Arg Gln Ser
216     290                 295                 300
219 Pro Lys Ala Gly Leu Leu Ser Leu Thr Asn Cys Pro Asn Phe Ala Ser
220 305                 310                 315                 320
223 Val Val Leu Gly Asn Ala Ala Gly Leu Gly Ile Ile Gly Met Tyr Lys
224                 325                 330                 335
227 Gly Arg Ala Pro Asn Leu Glu Leu Phe Ala Ala Ala Glu Ser Tyr Ala
228             340                 345                 350
231 Arg Thr Leu Arg Glu Asn Asn Lys Ile Asn Leu Ala Ala Leu Gly Leu
232         355                 360                 365
235 Thr Asp Asp Glu Arg Glu Ala Ala Thr Ser Tyr Leu Gly Gly Asp Asp
236     370                 375                 380
239 Glu Arg Ser Ser Lys Phe Glu
240 385                 390
243 <210> SEQ ID NO: 3
244 <211> LENGTH: 391
245 <212> TYPE: PRT
246 <213> ORGANISM: Avian pneumovirus B
248 <400> SEQUENCE: 3
250 Met Ser Leu Glu Ser Ile Arg Leu Ser Asp Leu Glu Tyr Lys His Ala
251 1               5                   10                  15
254 Ile Leu Asp Glu Ser Gln Tyr Thr Ile Arg Arg Asp Val Gly Ala Thr
255             20                  25                  30
258 Thr Ala Ile Thr Pro Ser Glu Leu Gln Pro Lys Val Ser Thr Leu Cys
259         35                  40                  45
262 Gly Met Ile Leu Phe Ala Lys His Ala Asp Tyr Glu Pro Ala Ala Gln
263     50                  55                  60
266 Val Gly Met Gln Tyr Ile Ser Thr Ala Leu Gly Ala Asp Lys Thr Gln
```

RAW SEQUENCE LISTING DATE: 02/02/2005
PATENT APPLICATION: **US/10/722,045A** TIME: 16:10:49

Input Set : **E:\7682108999-2.txt**
Output Set: **N:\CRF4\02022005\J722045A.raw**

```
267 65                  70                  75                  80
270 Gln Ile Leu Lys Ser Ser Gly Ser Glu Val Gln Gly Val Met Thr Lys
271                 85                  90                  95
274 Ile Val Thr Leu Pro Ala Glu Gly Pro Ile Arg Lys Arg Glu Val Leu
275             100                 105                 110
278 Asn Ile His Asp Ile Gly Pro Ala Trp Ala Asp Asn Val Glu Arg Thr
279         115                 120                 125
282 Ala Arg Glu Thr Met Ser Leu Met Val Lys Glu Lys Ala Gln Ile Pro
283     130                 135                 140
286 Lys Asn Gln Lys Pro Ser Ala Leu Asp Ala Pro Val Ile Leu Leu Cys
287 145                 150                 155                 160
290 Ile Gly Ala Leu Ile Phe Thr Lys Leu Ala Ser Thr Val Glu Val Gly
291                 165                 170                 175
294 Leu Glu Thr Ala Ile Arg Arg Ala Ser Arg Val Leu Ser Asp Ala Ile
295             180                 185                 190
298 Ser Arg Tyr Pro Arg Met Asp Ile Pro Arg Ile Ala Lys Ser Phe Phe
299         195                 200                 205
302 Glu Leu Phe Glu Lys Lys Val Tyr Tyr Arg Asn Leu Phe Ile Glu Tyr
303     210                 215                 220
306 Gly Lys Ala Leu Gly Ser Thr Ser Ser Gly Ser Arg Met Glu Ser Leu
307 225                 230                 235                 240
310 Phe Val Asn Ile Phe Met Gln Ala Tyr Gly Ala Gly Gln Thr Met Leu
311                 245                 250                 255
314 Arg Arg Gly Val Val Ala Arg Ser Ser Asn Asn Ile Met Leu Gly His
315             260                 265                 270
318 Val Ser Val Gln Ala Glu Leu Arg Gln Val Ser Glu Val Tyr Asp Leu
319         275                 280                 285
322 Val Arg Lys Met Gly Pro Glu Ser Gly Leu Leu His Leu Arg Gln Ser
323     290                 295                 300
326 Pro Lys Ala Gly Leu Leu Ser Leu Thr Ser Cys Pro Asn Phe Ala Ser
327 305                 310                 315                 320
330 Val Val Leu Gly Asn Ala Ala Gly Leu Gly Ile Ile Gly Met Tyr Lys
331                 325                 330                 335
334 Gly Arg Ala Pro Asn Leu Glu Leu Phe Ser Ala Ala Glu Ser Tyr Ala
335             340                 345                 350
338 Arg Ser Leu Lys Glu Ser Asn Lys Ile Asn Leu Ala Ala Leu Gly Leu
339         355                 360                 365
342 Thr Glu Asp Glu Arg Glu Ala Ala Thr Ser Tyr Leu Gly Gly Asp Glu
343     370                 375                 380
346 Asp Lys Ser Gln Lys Phe Glu
347 385                 390
350 <210> SEQ ID NO: 4
351 <211> LENGTH: 394
352 <212> TYPE: PRT
353 <213> ORGANISM: Avian pneumovirus C
355 <400> SEQUENCE: 4
357 Met Ser Leu Gln Gly Ile Gln Leu Ser Asp Leu Ser Tyr Lys His Ala
358 1               5                   10                  15
361 Ile Leu Lys Glu Ser Gln Tyr Thr Ile Lys Arg Asp Val Gly Thr Thr
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RAW SEQUENCE LISTING DATE: 02/02/2005
PATENT APPLICATION: US/10/722,045A TIME: 16:10:49

Input Set : E:\7682108999-2.txt
Output Set: N:\CRF4\02022005\J722045A.raw

```
362             20                  25                  30
365 Thr Ala Val Thr Pro Ser Ser Leu Gln Arg Glu Val Ser Leu Leu Cys
366         35                  40                  45
369 Gly Glu Ile Leu Tyr Ala Lys His Thr Asp Tyr Ser His Ala Ala Glu
370     50                  55                  60
373 Val Gly Met Gln Tyr Val Ser Thr Thr Leu Gly Ala Glu Arg Thr Gln
374 65                  70                  75                  80
377 Gln Ile Leu Lys Asn Ser Gly Ser Glu Val Gln Ala Val Leu Thr Lys
378                 85                  90                  95
381 Thr Tyr Ser Leu Gly Lys Gly Lys Asn Ser Lys Gly Glu Glu Leu Gln
382             100                 105                 110
385 Met Leu Asp Ile His Gly Val Glu Arg Ser Trp Ile Glu Glu Val Asp
386         115                 120                 125
389 Lys Glu Ala Arg Lys Thr Met Ala Ser Ala Thr Lys Asp Asn Ser Gly
390     130                 135                 140
393 Pro Ile Pro Gln Asn Gln Arg Pro Ser Ser Pro Asp Ala Pro Ile Ile
394 145                 150                 155                 160
397 Leu Leu Cys Ile Gly Ala Leu Ile Phe Thr Lys Leu Ala Ser Thr Ile
398                 165                 170                 175
401 Glu Val Gly Leu Glu Thr Ala Val Arg Arg Ala Asn Arg Val Leu Asn
402             180                 185                 190
405 Asp Ala Leu Lys Arg Phe Pro Arg Ile Asp Ile Pro Lys Ile Ala Arg
406         195                 200                 205
409 Ser Phe Tyr Asp Leu Phe Glu Gln Lys Val Tyr Tyr Arg Ser Leu Phe
410     210                 215                 220
413 Ile Glu Tyr Gly Lys Ala Leu Gly Ser Ser Ser Thr Gly Ser Lys Ala
414 225                 230                 235                 240
417 Glu Ser Leu Phe Val Asn Ile Phe Met Gln Ala Tyr Gly Ala Gly Gln
418                 245                 250                 255
421 Thr Met Leu Arg Trp Gly Val Ile Ala Arg Ser Ser Asn Asn Ile Met
422             260                 265                 270
425 Leu Gly His Val Ser Val Gln Ala Glu Leu Lys Gln Val Thr Glu Val
426         275                 280                 285
429 Tyr Asp Leu Val Arg Glu Met Gly Pro Glu Ser Gly Leu Leu His Leu
430     290                 295                 300
433 Arg Gln Asn Pro Lys Ala Gly Leu Leu Ser Leu Ala Asn Cys Pro Asn
434 305                 310                 315                 320
437 Phe Ala Ser Val Val Leu Gly Asn Ala Ser Gly Leu Gly Ile Leu Gly
438                 325                 330                 335
441 Met Tyr Arg Gly Arg Val Pro Asn Thr Glu Leu Phe Ala Ala Ala Glu
442             340                 345                 350
445 Ser Tyr Ala Arg Ser Leu Lys Glu Ser Asn Lys Ile Asn Phe Ser Ser
446         355                 360                 365
449 Leu Gly Leu Thr Glu Glu Glu Lys Glu Ala Ala Glu Asn Phe Leu Asn
450     370                 375                 380
453 Ile Asn Glu Glu Gly Gln Asn Asp Tyr Glu
454 385                 390
457 <210> SEQ ID NO: 5
458 <211> LENGTH: 391
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 02/02/2005
PATENT APPLICATION: US/10/722,045A TIME: 16:10:50

Input Set : E:\7682108999-2.txt
Output Set: N:\CRF4\02022005\J722045A.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:105; Xaa Pos. 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22
Seq#:105; Xaa Pos. 29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47
Seq#:105; Xaa Pos. 48
Seq#:106; Xaa Pos. 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22
Seq#:106; Xaa Pos. 23,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47
Seq#:106; Xaa Pos. 48
Seq#:133; N Pos. 6
Seq#:135; N Pos. 6,9
Seq#:138; N Pos. 4
Seq#:142; N Pos. 10,19
Seq#:143; N Pos. 17

Invalid <213> Response:
Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:101,102,103,104,107,108,109,110,111,112,113,114,115,116,117,118,119,120
Seq#:121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138
Seq#:139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156
Seq#:157,158,159,160,161,162,163,164,165,172

VERIFICATION SUMMARY DATE: 02/02/2005
PATENT APPLICATION: US/10/722,045A TIME: 16:10:50

Input Set : E:\7682108999-2.txt
Output Set: N:\CRF4\02022005\J722045A.raw

L:6723 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:105 after pos.:0
M:341 Repeated in SeqNo=105
L:6757 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106 after pos.:0
M:341 Repeated in SeqNo=106
L:7100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:133 after pos.:0
L:7135 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:135 after pos.:0
L:7177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:138 after pos.:0
L:7236 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:142 after pos.:0
L:7254 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:143 after pos.:0